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## ABSTRACT

The present invention provides a method for suppressing power fluctuation of a high-efficiency combined power generation system that uses a byproduct gas generated in a plant, the method including the steps of adding a high-calorific-value substance having a calorific value higher than that of the byproduct gas so as to increase both the total calorie per unit of time and the calorific value per unit gas quantity up to predetermined targets; and adding a low-calorific-value substance having a calorific value lower than that of the byproduct gas so as to control the caloric value and/or the composition of the power generation fuel, whereby the total calorie and the calorific value are controlled within predetermined ranges. The present invention also provides another method for suppressing power fluctuation of a high-efficiency combined power generation system that uses a byproduct gas generated in a plant, the method including a step of alternately switching charge/discharge modes of at least two storage apparatuses to suppress the fluctuation of the power generated, and a power generating facility for these methods. According to the present invention, not only short-term power fluctuation caused inside the plant but also long-term fluctuation are also suppressed. The excess power, whose fluctuation is suppressed, can be controlled to have a power supply pattern

coincident with a power demand pattern so that power can be stably supplied to a site outside the plant.